AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for correlating ~~a~~ an input signal, the input signal compliant with at least one specification selected from IEEE 802.11a WLANs and HIPERLAN/2, with a sequence of alternative correlator coefficients, each alternative sequence associated with specified non-negative integer n, the method comprising the steps of:

digitally sampling the input signal to generate a plurality of real signal digital samples and a plurality of imaginary signal digital samples;

scaling the plurality of real signal digital samples in accordance with a selected~~the~~ sequence of alternative correlator coefficients to generate a plurality of scaled real signal samples;

scaling the plurality of imaginary signal digital samples in accordance with the selected sequence of alternative correlator coefficients to generate a plurality of scaled imaginary signal samples;

combining, in accordance with a specified correlator form, a first subset of the plurality of scaled real signal samples and a second subset of the plurality of scaled imaginary signal samples to generate at least one correlator output signal.

2. (Currently amended) The method of claim 1 wherein a correlator coefficient value of 0 for a ~~signal~~digital sample is implemented in the scaling ~~step~~steps by not using the ~~signal~~digital sample in the combining step.

3. (Currently amended) The method of claim 1 wherein a -1 correlator coefficient value for a ~~signal~~digital sample is implemented in the scaling ~~step~~steps by inverting the ~~signal~~digital sample in the combining step.

4. (Currently amended) The method of claim 1 wherein a correlator coefficient value of 0.5 for a ~~signal~~digital sample is implemented in the scaling step by shifting the ~~signal~~digital sample in a shift register prior to the combining step.

5. (Currently amended) The method of claim 1 wherein imaginary and real signal digital samples are handled in separate data streams prior to the combining step.

6. (Currently amended) The method of claim 1 wherein a ~~signal~~digital sample is detected at the input to a storage location.

7. (Currently amended) The method of claim 1 wherein one or more of a first plurality of storage locations, having at least one real signal digital sample, and a second plurality of storage locations, having at least one imaginary signal digital sample, are connected together as a shift register.

8. (Previously presented) The method of claim 1 wherein the sequence of alternative correlator coefficients are members of the group consisting of $\{-1, -1 + 2^{-n}, -1 + 2\times 2^{-n}, -1 + 3\times 2^{-n}, \ldots, 1\}$.

9. (Previously presented) The method of claim 1 wherein the specified correlator form is $\Xi_n = \sum_{m=1}^{16} r_{n-16+m} a_m$ wherein furthermore a_m is the scaling factor for signal sample r_{n-16+m}.

10. (Currently amended) The method of claim 8 ~~A method as set forth in claim 1~~, wherein the integer n is chosen from the group consisting of 0, 1, and 2, and n selects the sequence of alternative correlator coefficients.

11. (Currently amended) The method of ~~A method as set forth in~~ claim 1 wherein the sampling step is applied to a in-phase part of a baseband signal to generate the plurality of real signal digital samples.

12. (Currently amended) The method of ~~A method as set forth in~~ claim 1 wherein the sampling step is applied to a quadrature-phase part of a baseband signal to generate the plurality of imaginary signal digital samples.

13. (Currently amended) An apparatus that generates a correlation signal from ~~for performing correlation on~~ a plurality of streams of input signal samples ~~as inputs, thereby producing a plurality of correlation results~~, the apparatus comprising:

~~means for handling a first stream in the plurality of streams;~~

~~means for handling a second stream in the plurality of streams;~~

at least one digital signal processor, each processor ~~at least one first computing means,~~ having a plurality of inputs and at least one output, ~~for performing at least one operation~~ that performs all of the operations from the group consisting of bitwise scaling, addition, time-wise shifting, and ~~subtraction~~inversion on one or more of two streams from the plurality of streams ~~the first stream and the second stream~~, and a current value of a sample ~~stream of samples~~ from the plurality of streams of samples; and

an adder that adds the~~at least one second computing means for performing addition operation on~~ outputs of the processor~~at least one first computing means~~ to generate a first correlation signal ~~result;~~

wherein each processor bitwise scaling operation depends on a set of correlator values that generate the first correlation signal complaint with either HIPERLAN/2 or IEEE 802.11a WLAN specifications.

14. (Currently amended) The apparatus of~~An apparatus as set forth in~~ claim 13, further comprising ~~wherein the means for handling a first stream is~~ a shift register that stores samples from a stream in the plurality of streams as finite-precision numbers.

15. (Canceled).

16. (Currently amended) An apparatus as set forth in claim 13, wherein furthermore, the adder~~at least one second computing means~~ receives as input, outputs from two ~~first computing means~~processors, and each processor~~first computing means~~ in turn, performs operations on only one stream~~receiving its input from a distinct stream from the plurality of streams of signal samples~~.

17. (Canceled).

18. (Currently amended) ~~An apparatus as set forth in~~The apparatus of claim 13, wherein ~~furthermore, the at least one first computing means is~~each processor has one output and a number of inputs selected from the group consisting of 5, 7 and 9~~a 5-input 1-output~~

~~computing means, a 7-input 1-output computing means, and a 9-input 1-output computing means~~.

19 -21. (Canceled).

22. (Currently amended) A method for correlating a complex-valued received signal samples with a 16-point waveform, to produce a complex-valued correlation result signal at about each sampling instant, wherein the complex-valued received signal samples and the 16-point waveform are compliant with IEEE 802.11a WLANs or HIPERLAN/2, the method comprising the steps of:

selecting a 16-point waveform representation from the group consisting of waveform representation {-1, 0, 1, 1, 1, 0, -1, 0, -I, I, -I, 0, 0}, waveform representation {-0.5, 0.5i, 1, 0.5, 1, 0.5i, -0.5, 0, 0.5i, -0.5, -I, -0.5i, -I, -0.5, 0.5i, 0}, waveform representation {0.5, 0.5i, 1, 0.5, 1, 0.5i, -0.5, 0.5-0.5i, 0.5i, -0.5, -I, -0.5i, -I, -0.5, 0.5i, 0.5 – 0.5i};

splitting a received signal into a plurality of streams; storing, in a shift register ~~configuration,~~ signal samples from at least one signal stream; scaling, in accordance with a selected 16-point representation, at least one stored signal

samples ~~samples~~ by an ~~one~~ operation from the group consisting of inverting[[,]] and shifting;

processing, in accordance with a selected 16-point representation, the at least one stored signal sample by adding it to at least one other signal sample from the ~~same signal stream~~ plurality of streams to produce a first interim output; and

generating the complex valued correlation result signal by combining the first interim output with a second interim output.

23. (Currently amended) ~~A~~ The method of claim 22 wherein the at least one other signal sample is scaled prior to the processing step.

24. (New) The apparatus of claim 13, wherein the set of correlator values is selected from a group of sets consisting of {-1, 0, 1, 1, 1, 0, -1, 0, i, 0, -i, -i, -i, 0, i, 0}, {-0.5, 0.5i, 1, 0.5, 1, 0.5i, -0.5, 0, 0.5i, -0.5, -i, -0.5i, -i, -0.5, 0.5i, 0}, and {-0.5, 0.5i, 1, 0.5, 1, 0.5i, -0.5, 0.5 - 0.5i, 0.5i, -0.5, -i, -0.5i, -i, -0.5, 0.5i, 0.5 - 0.5i}.

25. (New) A receiver compliant with the IEEE 802.11a WLANs or HIPERLAN/2 specifications, comprising:

at least one digital signal processor, each having a plurality of inputs and at least one output, that performs at least one operation from the group consisting of scaling, addition, shifting, and subtraction on one or more streams from a plurality of streams of samples, and a current value of a stream of samples from the plurality of streams of samples; and

an adder that adds at least one output of the processor to generate a first correlation signal.